



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

Refer to:
2000/01459

July 25, 2002

Mr. Jeff Blackwood
Forest Supervisor
Umatilla National Forest
2517 SW Hailey Ave.
Pendleton, Oregon 97801

Karyn Wood
Forest Supervisor
Wallowa-Whitman National Forest
PO Box 907
Baker City, OR 97814

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation on the Effects of the Minerals Activities on Lands
Administered by the Umatilla and Wallowa-Whitman National Forests in the North Fork
John Day River Subbasin, Oregon, FY2002-2007.

Dear Mr. Blackwood and Ms. Wood:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to the section 7 of the Endangered Species Act (ESA) on the effects of the subject Minerals Activities on lands administered by the Umatilla and Wallowa-Whitman National Forests in the North Fork John Day River subbasin, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Middle Columbia River (MCR) steelhead (*Onchorynchus mykiss*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are reasonable and appropriate to minimize the impact of incidental take associated with these actions.

This Opinion also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation Management Act and implementing regulations at 50 CFR Part 600. The North Fork John Day River Subbasin has been designated as essential fish habitat for chinook salmon (*Onchorynchus tshawytscha*).



If you have any questions regarding this consultation please contact Randy Tweten of my staff in the Oregon Habitat Branch, at 541.975.1835 ext. 229.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Katherine Ramsey, UNF
Greg Smith, USFWS
Dorthy Mason, BLM
Bob Mason, WWNF

Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation


BIOLOGICAL OPINION

Minerals Activities on Lands Administered by Umatilla and Wallowa-Whitman National
Forests,
North Fork John Day River Subbasin, Oregon,
for FY2002-2007

Agency: U.S.D.A. Forest Service

Consultation
Conducted By: NOAA Fisheries,
Northwest Region

Date Issued: July 25, 2002

Issued by: 
D. Robert Lohn
Regional Administrator

Refer to: 2000/01459

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1. ENDANGERED SPECIES ACT

1.1 Background

On January 5, 2000, the National Marine Fisheries Service (NOAA Fisheries) received a letter from the Umatilla National Forest (UNF) requesting formal consultation regarding the potential effects of all proposed and ongoing Forest Service activities on the UNF and the Wallow-Whitman National Forest (WWNF) in the North Fork John Day River (NFJD) subbasin on Middle Columbia River (MCR) steelhead. The letter also prioritized actions for consultation, naming the mining operations as the top priority. The accompanying biological assessment (BA) described ongoing mining operations in the NFJD on the UNF, WWNF, Malheur National Forest (MNF), and the Baker Resource Area, Vale District of Bureau of Land Management (BLM), as well as the environmental baseline, and the potential effects of those actions on MCR steelhead in the NFJD subbasin. To address like actions through this batched consultation, WWNF and the NOAA Fisheries agreed that five actions from a previously submitted BA, received by NOAA Fisheries on June 14, 1999, would be included in this consultation. Those mining operations requiring formal consultation have been batched by the UNF, and are submitted as one action for consultation. The mining operations for which informal consultation was requested will be addressed in a separate consultation document (NOAA Fisheries 2000/01460).

On April 27-29, 1999, May 11-14, 1999, and June 15-17, 1999, NOAA Fisheries and the UNF met to discuss this consultation and conduct site visits to some of the mining claims. On June 6, 2001, NOAA Fisheries contacted the UNF and WWNF to obtain clarification on status of Pete Mann ditch as it relates to mining actions in the NFJD. NOAA Fisheries requested that the UNF determine if the issuance of a special use permit was required for the operation of this ditch. If a special use permit was to be issued, the UNF would be required to initiate ESA section 7 consultation on the operation of the Pete Mann ditch, thus removing this on-going action from the analysis of cumulative effects addressed in this biological opinion (Opinion). In the BA, the UNF identified the Pete Mann ditch as a cumulative effect occurring in the action area. On January 22, 2002, the UNF responded with a letter stating that the UNF planned to issue a special use permit for the Pete Mann ditch and would initiate separate ESA consultation on this action. As such, the Pete Mann ditch is not considered in the analysis of cumulative effects (50 CFR 402.02) for this Opinion.

On July 11, 2002, NOAA Fisheries met with representatives from the UNF and WWNF to review a draft of this Opinion. The UNF and WWNF provided comments on the draft Opinion at the meeting and also sent a letter to NOAA Fisheries dated July 15, 2002, restating those comments. On July 12, 2002, representatives from the UNF met with representatives from the applicants (mining claimants) to discuss requirements found in the draft Opinion. The applicant's written comments were provided to NOAA Fisheries by the UNF on July 16, 2002.

The MCR steelhead (*Onchorynchus mykiss*) was listed as threatened under the Endangered Species Act (ESA) by NOAA Fisheries on March 25, 1999 (64 FR 14517). NOAA Fisheries

applied protective regulations to MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

The objective of this Opinion is to determine whether the subject minerals operations during FY2002-2007 are likely to jeopardize the continued existence of MCR steelhead. As explained below, NOAA Fisheries evaluates the impact of the proposed action on habitat in its jeopardy analysis.

This Opinion does not include a critical habitat analysis, because critical habitat for this ESU was recently vacated by a court order. On February 16, 2000, NOAA Fisheries designated critical habitat for 19 ESUs of chinook, chum, sockeye salmon, as well as steelhead trout in Washington, Oregon, Idaho, and California. On September 27, 2000, NOAA Fisheries approved Amendment 14 to the Pacific Coast Salmon Fishery Management Plan designating marine and freshwater essential fish habitat for Pacific Salmon pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Shortly after these designations, the National Association of Homebuilders filed a lawsuit challenging the designations on a number of grounds. On April 30, 2002, the United States District Court for the District of Columbia adopted a consent decree resolving the claims in a lawsuit. Pursuant to the consent decree, the court issued an order vacating the critical habitat designations, but retaining the MSA essential fish habitat designations. (National Homebuilders, *et al.* v. Evans, Civil Action No. 00-2799 (CKK) (D.D.C, April 30, 2002)). While the critical habitat designation for MCR steelhead is no longer in effect, NOAA Fisheries intends to re-issue critical habitat designations at some point in the future. Reinitiation of consultation will be required if the proposed action affects critical habitat designated after consultation has been completed. 50 C.F.R. § 402.16(d).

1.2 Proposed Action

The BA submitted to NOAA Fisheries describes proposed activities for 137 minerals operations in the NFJD subbasin. The UNF determined in the BA that activities on 69 operations “may affect, but not likely to adversely affect” (NLAA) MCR steelhead. The 68 operations that were determined to be “likely to adversely affect” (LAA) actions, which are summarized in Table 1 and individually described below, are the subject of this Opinion. The remaining 69 NLAA operations are addressed in a separate letter of concurrence (2000/01460).

Table 1. North Fork John Day River subbasin LAA minerals operations and the abbreviated rationale for the “likely to adversely affect” (LAA) determination.

Minerals Activity Name	WS ¹	SWS ²	Equip. ³	S. Dredge ⁴	Ford ⁵	H ² O wd ⁶	Road ⁷	Other ⁸
Apache 1 (U-66)	35	35C		x				
Camp Creek Placers (U-30/50)	35	35D				x		
Bad Dog (U-61)	93	93A		x				
Rep. C. #10 (U-13) and #11 (U-39)	93	93A	x	x	x			
Rep. C. 8 EE & B. Bar G (U-4)	93	93A	x	x	x			
Repub. Comeback #6 (U-37)	93	93A		x				
Repub. Comeback #7 (U-08)	93	93A	x	x	x	x		
Hopeful 2&3 (U-14)	93	93A	x		x			
Tar Hill/Ten Cent (U-46)	93	93B	x					
E. Ten Cent Crk. Claim (U-32)	93	93B	x					
4-S Placer Lode	93	93C	x	x				
Blue Sky	93	93C		x				
Eddy 123 GF L Chip Crk PM (U-09)	93	93C	x	x	x		x	
Land L#1	93	93C		x				
Little Cross	93	93C		x				
M&L Placer Claims	93	93C	x	x				
Muffin Placers	93	93C	x	x				
Rock-a-Gold	93	93C	x	x				
Troy D Suction Dredging	93	93C		x				
Yellow Gold Testing/Mining	93	93C	x	x		x		
4-S Lode	93	93C	x					
Boulder Creek Placer	93	93C	x		x	x		
Magnolia Mine Lode Claim (U-38)	93	93C			x		x	
Petro	93	93C						x
Tetra Milling	93	93C	x					
Aurelia Claim (U-31B)	93	93H	x		x	x	x	
North Tram (U-31C)	93	93H	x		x		x	
Grubstake Placer (U-33)	93	93J	x	x				
Bunch Bucket 2 (U-51)	93	93J	x			x		
Clear Ruby Placers (U-31)	93	93J			x		x	
Lightning Creek Placers (U-26)	93	93K	x					
Belvadear	93	93L	x	x				
L&H	93	93L	x	x	x			
Olive Placer	93	93L		x				
Oliver Tone Placer	93	93L	x	x	x			
Pam's Papa	93	93L		x				
Quartz Gulch Testing/Mining	93	93L	x	x				
Lower McWillis	93	93L	x					
McWillis Gulch Mining	93	93L						x
Eureka	93	93M	x	x				
Bullrun Placers	93	93N	x	x		x		
¹ Watershed (5 th Code Hydrologic Unit Code (HUC)), ² Subwatershed (SWS) (6 th Code HUC, SWS name found in Table 3 below), ³ Use of heavy machinery within the RHCA, ⁴ Use of a suction dredge in the operation, ⁵ Use of a ford to access operations, ⁶ Water withdrawn from streams for use in operations, ⁷ Access road to operations, and ⁸ Other reason for LAA determination.								
Darla J	93	93N		x				

Minerals Activity Name	WS ¹	SWS ²	Equip. ³	S. Dredge ⁴	Ford ⁵	H ² O wd ⁶	Road ⁷	Other ⁸
Freestone Placer	93	93N		x				
Kaser Claims	93	93N		x				
Swamp Placer	93	93N		x				
Lori #1	93	93N						x
Onion Placer	93	93N	x					
Bull Run Placers (Proposed)	93	93O	x	x				
Channel Placer	93	93O		x				
Freestone Placer Testing Proposed	93	93O	x	x				
Griffith/Harris Placer	93	93O	x	x				
Blue Heaven 1&2 (U-21)	94	94D		x				
Griffin Placers	94	94F		x				
My Love Placer	94	94F	x	x				
Scott Placers	94	94F	x	x				
Lead Lode	94	94H						x
South Trail Placers	94	94F		x				
Tassie Lea Placer	94	94F	x	x		x		
Big Indian	94	94F	x			x		
French Gulch	94	94F						x
Lovestock Claim	94	94F						x
Lucky Strike Placers	94	94G	x	x		x		
Rainbow #1	94	94G		x				
Rainbow Placer	94	94G		x				
Cabell City Lodes	94	94G				x		x
Centennial Lode/West Point	94	94G						x
Centennial Placer	94	94G	x			x		
Paddy D Placer Claims	94	94G	x		x			

¹Watershed (5th Code Hydrologic Unit Code (HUC)), ²Subwatershed (SWS) (6th Code HUC, SWS name found in Table 3 below), ³Use of heavy machinery within the RHCA, ⁴Use of a suction dredge in the operation, ⁵Use of a ford to access operations, ⁶Water withdrawn from streams for use in operations, ⁷Access road to operations, and ⁸Other reason for LAA determination.

1.2.1 Minerals Operations Descriptions

All 68 mining operations addressed in this Opinion have been fully described in the BA, and these action descriptions are hereby incorporated by reference. The names of the operations, the watershed in which they occur, and the rationale for the operation being determined to be LAA may be found in Table 1. Table 2 identifies if the mining operation is operating with a Plan of Operation (POO), Notice of Intent (NOI), and whether a reclamation bond has been collected. A NOI is required to be filed if the proposed mining operation might cause any surface disturbance. If it is determined, through analysis of the NOI, that significant ground disturbance will occur from the activity, a POO is required. All of these proposed operations are small in scale (*e.g.* all cause less than one acre in annual disturbance and most cause less than ½ acre).

Table 2. Mining operations in the North Fork John Day River and their regulatory status.

Minerals Activity Name	WS¹	SWS²	POO³	NOI⁴	Bond⁵	Batch⁶
Apache 1 (U-66)	35	35C	N	N		E1.2
Camp Creek Placers (U-30/50)	35	35D	Prop			E1.9
Bad Dog (U-61)	93	93A		x		E1.2
Rep. C. #10 (U-13) and #11 (U-39)	93	93A	N		Y	E1.8
Rep. C. 8 EE & B. Bar G (U-4)	93	93A	x			E1.3
Repub. Comeback #6 (U-37)	93	93A	N	N		E1.2
Repub. Comeback #7 (U-08)	93	93A	x			E1.3
Hopeful 2&3 (U-14)	93	93A	x			E1.3
Tar Hill/Ten Cent (U-46)	93	93B	x			E1.3
E. Ten Cent Crk. Claim (U-32)	93	93B	x			E1.4
4-S Placer Lode	93	93C		x	N	E3.2
Blue Sky	93	93C		x	N	E3.2
Eddy 123 GF L Chip Crk PM (U-09)	93	93C	x		N	E1.8
Land L#1	93	93C		x	N	E3.2
Little Cross	93	93C		x	N	E3.2
M&L Placer Claims	93	93C	x	x	Y	E3.2
Muffin Placers	93	93C	x	x	Y	E3.2
Rock-a-Gold	93	93C	x	x	Y	E3.2
Troy D Suction Dredging	93	93C	x		Y	E3.2
Yellow Gold Testing/Mining	93	93C	x	x	Y	E3.2
4-S Lode	93	93C		x	N	E3.2
Boulder Creek Placer	93	93C	x		Y	E3.2
Magnolia Mine Lode Claim (U-38)	93	93C	x			E1.5
Petro	93	93C		x	N	E3.2
Tetra Milling	93	93C	x		Y	E3.2
Aurelia Claim (U-31B)	93	93H	?		N	E1.8
North Tram (U-31C)	93	93H		x	N	E1.8
Grubstake Placer (U-33)	93	93J	x			E1.3
Bunch Bucket 2 (U-51)	93	93J	x			E1.3
Clear Ruby Placers (U-31)	93	93J	N	N		E1.8
Lightning Creek Placers (U-26)	93	93K	x		Y	E1.8
Belvadear	93	93L	x		Y	E3.2
L&H	93	93L	x		Y	E3.2
Olive Placer	93	93L		x	N	E3.2
Oliver Tone Placer	93	93L	x		Y	E3.2
Pam's Papa	93	93L		x	N	E3.2
Quartz Gulch Testing/Mining	93	93L	x		Y	E3.2
Lower McWillis	93	93L		x	N	E3.2

¹Watershed (5th Code HUC), ²Subwatershed (6th Code HUC, SWS name found in Table 3), ³Plan of Operation “N” indicates no POO, “Prop” indicates proposed POO, and “x” indicates the action does have a POO), ⁴“x”= Notice of Intent, ⁵“Y” or “N”, has a reclamation bond been posted, and ⁶Batch of operations within BA that project was described

Minerals Activity Name	WS¹	SWS²	POO³	NOI⁴	Bond⁵	Batch⁶
McWillis Gulch Mining	93	93L	x		Y	E3.2
Eureka	93	93M		x	N	E3.2
Bullrun Placers	93	93N	x	x	Y	E3.2
Darla J	93	93N		x	N	E3.2
Bull Run Placers (Proposed)	93	93O				E3.2
Channel Placer	93	93O		x	N	E3.2
Freestone Placer Testing Proposed	93	93O				E3.2
Griffith/Harris Placer	93	93O		x	N	E3.2
Blue Heaven 1&2 (U-21)	94	94D	x			E1.2
Griffin Placers	94	94F		x	N	E3.2
My Love Placer	94	94F	x	x	Y	E3.2
Scott Placers	94	94F		x	N	E3.2
South Trail Placers	94	94F		x	N	E3.2
Tassie Lea Placer	94	94F	x	x	Y	E3.2
Big Indian	94	94F	x	x	Y	E3.2
French Gulch	94	94F	x	x	Y	E3.2
Lovestock Claim	94	94F	x	x	Y	E3.2
Lucky Strike Placers	94	94G	x	x	Y	E3.2
Rainbow #1	94	94G		x	N	E3.2
Rainbow Placer	94	94G		x	N	E3.2
Cabell City Lodes	94	94G		x	N	E3.2
Centennial Lode/West Point	94	94G	x	x	Y	E3.2
Centennial Placer	94	94G	x	x	Y	E3.2
Paddy D Placer Claims	94	94G		x	N	E3.2
Lead Lode	94	94H	x	x	Y	E3.2
¹ Watershed (5 th Code HUC), ² Subwatershed (6 th Code HUC, SWS name found in Table 3), ³ Plan of Operation (“N” indicates no POO, “Prop” indicates proposed POO, and “x” indicates the action does have a POO), ⁴ “x”= Notice of Intent, ⁵ “Y” or “N”, has a reclamation bond been posted, and ⁶ Batch of operations within BA that project was described						

Mineral deposits subject to lode claims include classic veins (or lodes) having well-defined boundaries. They also include other rock in-place bearing valuable minerals and may be broad zones of mineralized rock. Mineral deposits subject to placer claims are all those not subject to lode claims. These include deposits of unconsolidated materials, such as sand and gravel containing free gold or other materials and many non-metallic bedded or layered deposits, such as gypsum, talc, and high calcium limestone.

Lode Claims

There are six operations in the BA that are classified as lode claims: The Aurelia Claim, Magnolia Mine Lode Claim, Lead Lode, Cabell City Lodes, Centennial Lode/West Point, and 4-S Lode. All, except for the Aurelia Claim, are underground operations. The BA describes the measures designed to protect fish and riparian areas that are incorporated into the mining operations. The Aurelia’s operations are restricted to the removal of material from existing tailings piles by a backhoe. For the Aurelia Claim, a small trommel plant is set-up approximately 25 feet from Ruby Creek and is charged with 50 gallons of water (which is withdrawn from Ruby Creek). There is a ford across Clear Creek, and Ruby Creek has been

diverted onto the access road. There is also a cabin associated with the claim which is about 10 feet from Ruby Creek. The location and use of this cabin is causing bank damage resulting in introduction of sediment to Ruby Creek.

The 4-S Lode has three portal locations. There is a 50-foot vegetated buffer between activities and Boulder Creek, and water samples from the mine have been analyzed and meet state water quality standards for metals.

The Cabell City Lodes have two adits in Riparian Habitat Conservation Areas (RHCAs)¹ and four on a hillside. Ore cars are used to transport ore which is then processed on-site in a small impact mill and a ball mill. Some creek water is used as makeup water in the pond system. Western larch and red fir trees, at least 50 feet from the stream, are removed to use as timbers to support the adits. All waste material is stored at least 25 feet from the creek and is stabilized to prevent movement into the stream.

The Centennial/West Point POO involves the underground lode mining of portals on the Centennial (outside the RHCA) and the West Point. Testing using shallow drilling with a 25-foot streamside buffer is also approved. There is no tree removal within 100 feet of the creek.

The Lead Lode involves the underground mining of two dry and one wet portal. Ore is hauled off site for processing. A ford is used to access the mine and logs are laid across the stream to protect the stream banks and channel. No storage of waste material occurs closer than 30 feet from the stream, and portal water is cycled through ponds to settle sediment prior to entering Limber Creek.

Work on the Magnolia Lode Claim occurs in an existing shaft and includes the use of a backhoe and a small cat on the site and hand work in the tunnel. Yearly disturbance occurs through the mucking out of the portal. The disturbance is controlled through the use of two settling ponds.

Placer/Lode Claims

There are six operations in the BA which are classified as placer/lode claims: The 4-S Placer/Lode, L and H, Pam's Papa, North Tram, Eddy 1,2, and 3, Gold Fraction Lode and Chipman Creek Placer Mine. The BA describes the measures designed to protect fish and riparian areas that are incorporated into the mining operations. The 4-S Placer/Lode uses a backhoe, a small cat, and trommel for its operations. Vein material is excavated and hauled to a local mill for processing. Placer material is processed in the trommel which is set up next to the settling pond. There is a 20-foot buffer between activities and Boulder Creek.

¹Riparian Habitat Conservation Area (RHCA) - Portions of watersheds where riparian dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris and nutrient delivery systems. (USDA and USDI. 1995.)

The L and H accesses operations via a ford across Olive Creek. The settling/recycling ponds are located over 200 feet from the creek, and a placer deposit is tested in a test hole (20 feet by 50 feet) on an annual basis. Work also occurs in adits, some of which are located within the RHCA. All operations are conducted at least 25 to 100 feet from the channel, except the use of a suction dredge.

The Pam's Papa conducts both lode and placer testing using hand tools and a suction dredge.

Work on the North Tram is conducted under an approved NOI, and occurs during the late summer and early fall. Access to the claim is via fords over Clear and Ruby Creeks, and Ruby Creek flows down the access road for approximately 250 feet. Test holes (3 by 6 by 6 feet) at least 20 feet from Ruby Creek are dug with a backhoe and a small trommel, wash plant is set up roughly 25 feet from Ruby Creek. Approximately 50 gallons of water are withdrawn from Ruby Creek and recirculated. Waste water from the processing is spread over a vegetated area which precludes flow to the creek. A cabin, approximately 10 feet from Ruby Creek, is used on this claim and its use appears to be contributing sediment to the stream.

The Eddy 1, 2, and 3/Gold Fraction Lode/Chipman Creek Placer Mine is under an approved POO but a reclamation bond has not been posted. There has been no activity on the claim in the last 10 years. The POO allows for access to the claim on a hardened ford over Granite Creek, a significant portion of which has been diverted down the access road. The lode claim is located about 200 feet from Granite Creek and has an open trench (approximately 6 feet by 12 feet by 8 feet deep) which was initially worked with a backhoe. Suction dredging is also approved under the POO.

Milling Operations

One milling operation is described in the BA, the Tetra Milling project. The BA describes the measures designed to protect fish and riparian areas incorporated into the mining operations. A hopper, jaw crusher, and vibratory mill are set up on the hillside. There are three settling/recycling ponds which are located over 50 feet from Boulder Creek and the bogs and pond on Last Chance Creek. There is a high berm of tailings (from previous activities) between the ponds, the processing plant and the creeks which minimizes the risk of any sediment or water discharge from the mill reaching steelhead habitat. During peak operations, as much as 50 tons of ore could be milled per day.

Placer Claims

The remaining 55 operations described in the BA are classified as placer claims. The BA describes the measures designed to protect fish and riparian areas incorporated into the mining operations. The placer operations described in the BA process unconsolidated materials (cobbles, gravel, and sand) which are typically found in floodplains. The unconsolidated materials are processed by using water in a pan, sluice box, trommel, highbanker, or dredge. A dredge would obtain the materials to be processed directly from a stream while the other methods would be able to use hand tools or mechanized equipment to gather the desired material.

As noted in Table 1, 19 of the proposed operations are LAA exclusively due to the use of suction dredges (Apache 1, Bad Dog, Blue Heaven 1&2, Blue Sky, Channel Placer, Darla J, Freestone Placer, Griffin Placers, Kaser Claims, Land L #1, Little Cross, Olive Placer, Petro, Rainbow #1, Rainbow Placer, Republican Comeback #6, South Trail Placers, Swamp Placer, and the Troy D Suction Dredging). Suction dredging is regulated by the Oregon Department of Environmental Quality (ODEQ) and is limited to working within the state approved in-water work window identified by the Oregon Department of Fish and Wildlife (ODFW) for this area (July 15 to August 15). By restricting these activities to the in-water work window, impacts to spawning adult MCR steelhead, redds, and pre-emergent alevins is avoided or minimized. However, the operation of suction dredges within streams may still result in harassment, injury, or death of rearing juvenile MCR steelhead. All work must be conducted within the wetted stream channel (*i.e.* no excavation of streambanks is allowed) and the operators are required to meet state water quality standards for sediment (no more than a 10% cumulative increase in turbidity). Most of these operations include the use of hand tools which typically have a very limited amount of ground disturbance.

Many of the remaining operations described in the BA involve more than one action that has LAA effects. These operations are batched together into similar types of actions. The batches from the UNF are identified as batches E1.2, E1.3, E1.4, E1.5, and E1.8. The operations on the WWNF were contained in batch E3.2. The operations on WWNF land contain special mitigation measures which are generally implemented on projects in the UNF batches but which are often not formally incorporated into the NOI or POO.

The use of mechanized equipment within the RHCA occurs on 29 placer operations (Belvadear, Big Indian, Boulder Creek Placer, Bullrun Placers, Bullrun Placers (Proposed), Bunch Bucket 2, Centennial Placer, East Ten Cent Creek Claim, Eureka, Freestone Placer Testing Proposed, Griffith/Harris Placer, Grubstake Placer, Hopeful 2 and 3, Lightning Creek Placers, Lower McWillis, Lucky Strike Placers, M and L Placer Claims, Muffin Placers, My Love Placer, Olive Tone Placer, Onion Placer, Paddy D Placer Claims, Quartz Gulch Testing/Mining, Republican Comeback #10 and #11, Republican Comeback #8 East End and Black Bar Gold, Republican Comeback #7, Rock-a-Gold, Scott Placers, Tar Hill/Ten Cent, Tassie Lea Placer, and the Yellow Gold Testing/Mining). The equipment used is typically a small backhoe which excavates material to be processed. Forest Service regulations require that the District Ranger must approve a NOI prior to the use of mechanized, earth-moving equipment. The amount of ground disturbed is kept to the minimum necessary (*e.g.* any one action will cause less than one acre in annual disturbance and most cause less than ½ acre of disturbance).

Another activity that adversely affects listed MCR steelhead is the withdrawal of water from streams for minerals processing. This occurs on 10 claims (Big Indian, Boulder Creek Placer, Bullrun Placers, Bunch Bucket 2, Centennial Placer, Lucky Strike Placers, Camp Creek Placers, Republican Comeback #7, Tassie Lea Placer, and the Yellow Gold Testing/Mining). The amount of water withdrawn is typically very small (ranging from 50 to approximately 1,500 gallons) and the water is recycled (most often through a series of settling ponds). Make-up water

(water used to keep settling ponds full) may be occasionally required, which is obtained by additional withdrawal from the stream system.

Fords across fish-bearing streams are often required to access mining claims and these fords may have adverse effects on listed fish species. Fords are used on eight operations described in the BA (Boulder Creek Placer, Clear Ruby Placers, Hopeful 2 and 3, Olive Tone Placer, Paddy D Placer Claims, Republican Comeback #10 and #11, Republican Comeback #8 East End and Black Bar Gold, and the Republican Comeback #7). In addition, the road used to access the Clear Ruby Placers has had Ruby Creek flowing down it for several years.

1.2.2 Minerals Project Monitoring

Batches E1.2, E1.3, E1.4, E1.5, and E1.8 (UNF) note that the Forest staff minerals technician checks all active claims at least twice a month (when active) to insure that Best Management Practices are followed, mining claimants are complying with their POO or NOI, and insuring all agreed to mitigations in the POO are being followed. Monitoring for the WWNF operations (batch E3.2) notes that some hand operators might only receive one site visit a season while most ongoing operations are visited at least weekly. Specific monitoring that occurs each mining season includes: (1) Erosion control monitoring on all mine access roads and test/mining areas to determine if erosion control measures were implemented under the terms of the POO; (2) monitoring and evaluation to ensure the mitigations in the POO are effective at minimizing adverse effects; (3) monitoring water quality to ensure State water quality standards are met, and; (4) monitoring operations to ensure the terms of the POO are being met as far as stream buffer widths, tree removal, and the size and type of disturbance. Additionally, both the UNF and WWNF have implemented the Minerals Monitoring Module from the Interagency Implementation Team (NOAA Fisheries, 1998).

1.3 Biological Information and Critical Habitat

The listing status and biological information for MCR steelhead are described in Busby *et al.* (1996) and NOAA Fisheries (1997). Additional protective measures under section 4(d) of the ESA were implemented on July 10, 2000 (50 FR 223). The minerals operations discussed in this Opinion are all within areas used by MCR steelhead for spawning, rearing, and migration. For the reasons explained in section 1.1, a critical habitat analysis is not included in this Opinion.

According to the BA, MCR steelhead adults enter the John Day River as early as September with peak migration in October, depending on water temperature. Spawning in the John Day basin occurs from March to mid- June. Fry emergence timing depends on time of spawning and water temperature during egg incubation, but usually occurs from late May through June. MCR steelhead rear in the cooler tributary streams and in the mainstem John Day River upstream from the City of John Day, Oregon (RM 248). High summer water temperatures in the mainstem downstream from Mt. Vernon, Oregon (RM 240) preclude summer rearing by juvenile salmonids. Essential features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitat for the species are: Substrate, water quality, water quantity, water temperature,

water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions (Bjornn and Reiser, 1991; NOAA Fisheries, 1996c; Spence *et.al.*, 1996). The essential features that the proposed actions may affect are substrate, water quality, water quantity, water temperature, and riparian vegetation resulting from minerals activities.

Trend data for MCR steelhead in the NFJD show a decline in the MCR steelhead population. The BA simply references a decline in steelhead production, while Busby *et al.* (1999) note a short-term decline of -1.2% and a long-term decline of -2.5%. Busby *et al.* (1999) also note that the overall decline of MCR steelhead in the John Day basin is of particular concern because the basin has historically supported the largest population of native, naturally-spawning summer steelhead in the MCR ESU. The current population status and trends for MCR steelhead are described in Busby *et al.* (1996), NOAA Fisheries (1997), and NOAA Fisheries (1999b). Busby (1996), citing ODFW data, stated that the total MCR steelhead run size for the John Day River basin has recently averaged about 5,000 fish. NOAA Fisheries (1997) citing Chilcote (1997) states that recent MCR steelhead redd counts conducted in established index areas throughout the John Day River basin suggest universal declines in redd abundance ranging from -0.9 to -5.6% over the past several years. NOAA Fisheries (1999b) updated the estimate of total summer steelhead run size in the John Day River basin to 10,000 fish through 1994. Annually declining trends of -1.2% in the short term and -2.5% in the long term were noted for MCR steelhead in the North Fork John Day River (NOAA Fisheries, 1999b). Baseline population data for the Granite Creek and Upper North Fork John Day River watersheds (5th code HUC) are sparse but suggest a depressed but stable trend (ODFW, 2001).

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. As explained in section 1.1, a critical habitat analysis is not included in this Opinion. This analysis involves the definition of the biological requirements and current status of the listed species, and the evaluation of the relevance of the environmental baseline to the species' current status.

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." Based on this information, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

For the subject action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action and considers the extent to which the proposed or continuing action impairs the function of essential biological requirements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

1.4.1 Biological Requirements

The first step NOAA Fisheries uses when applying the ESA section 7(a)(2) to listed steelhead is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements may also be described as those habitat conditions necessary to ensure that MCR steelhead survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. These can be expressed in terms of physical, chemical, and biological parameters. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. MCR steelhead survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while at the same time removing adverse impacts of current practices. In conducting analyses of habitat-altering actions and essential habitat elements, NOAA Fisheries defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and uses "habitat approach" in its analysis (NOAA Fisheries 1999a). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

1.4.2 Environmental Baseline

The environmental baseline is an analysis of the effects of past and on-going human-caused and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02).

Action Area

The specific 6th code HUCs or subwatersheds affected by the mining operations are the North Fork John Day/Turner, North Fork John Day/Otter, Lower Granite Creek, Ten Cent Creek, Upper Granite Creek, Ruby Creek, Middle Clear Creek, Lightning Creek, Olive Creek, Beaver

Creek, Lower Bull Run Creek, Upper Bull Run Creek, North Fork John Day River/Thornburg, Trail Creek, North Fork John Day River/Mile 101, and Baldy Creek. The North Fork John Day/Turner and North Fork John Day/Otter subwatersheds have one operation in each and are located in the 5th code HUC named North Fork John Day River (a portion of the North Fork John Day River subbasin). All of the other mining operations are located in the 5th code HUCs named Granite Creek and Upper North Fork John Day River. These two HUCs are located at the very headwaters of the North Fork John Day subbasin. Effects from actions in the headwaters would be realized in a downstream direction until effects from other actions (most likely from activities on private land) would make upstream effects indistinguishable from other effects. The “action area” for this consultation, therefore, is the NFJD subbasin from the headwaters where these activities are located downstream to the confluence of the NFJD and the Middle Fork John Day River. These streams contain spawning, rearing, or migratory habitat for MCR steelhead.

The NFJD subbasin is contained within the John Day River basin and contributes over 60% of the average annual discharge for the basin. The John Day River is the longest free-flowing (*i.e.*, non-dammed) river with wild anadromous salmonid stocks in the Columbia River basin. Federal land ownership is approximately 63% (Forest Service - 60% and BLM - 3%) and over 33% of the subbasin is privately owned. The state of Oregon manages approximately 2%, while other ownership also amounts to about 2%. Approximately 77% of the subbasin is forested land, and range land and pasture land accounts for about 20%. The remaining portion of the subbasin is crop land and irrigated agriculture.

The land ownerships in the specific subwatersheds affected by these actions are listed in Table 3. With the exception of the North Fork John Day/Turner and North Fork John Day/Otter subwatersheds (one mining action in each), the overall private land ownership is small compared to lands managed by the Forest Service. The percentage of acres and stream length within RHCAs that are in private ownership is presented in Table 4.

Table 3. Land ownership in the specific subwatersheds (SWS) addressed in this Opinion.

SWS	Name	Total Acres	Forest Service Acres	Private Acres	State Acres
35C	North Fork John Day/Turner	5,425	2,777	2,429	219
35D	North Fork John Day/Otter	8,722	7,330	1,392	0
93A	Lower Granite Creek	9,675	9,134	541	0
93B	Ten Cent Creek	4,169	3,534	635	0
93C	Upper Granite Creek	10,786	10,282	504	0
93H	Ruby Creek	3,047	3,047	0	0
93J	Middle Clear Creek	2,117	1,989	128	0
93K	Lightning Creek	4,826	4,453	373	0
93L	Olive Creek	4,725	3,921	804	0
93M	Beaver Creek	8,352	8,165	187	0
93N	Lower Bull Run Creek	10,120	9,672	448	0
93O	Upper Bull Run Creek	9,298	9,113	185	0
94D	North Fork John Day/Thornburg	4,679	4,568	111	0
94F	Trail Creek	12,307	12,266	41	0
94G	North Fork John Day/Mile 101	8,497	8,243	254	0
94H	Baldy Creek	6,373	6,191	182	0
	TOTALS:	113,118	104,685	8,214	219

Table 4. Percentages of acres and stream length within RHCAs that are in private ownership within subwatersheds addressed in this Opinion (USDA Forest Service, 2001).

SWS	Private Land Acres	RHCA Acres on Private	% RHCA on Private	Total Stream Miles	Stream Miles on Private	% Stream Miles on Private
35C	2,429	438	18	29	14	49
35D	1,392	390	28	52	12	23
93A	541	189	35	60	4	7
93B	635	109	17	27	3	13
93C	504	58	11	40	1	2
93H				16	0	0
93J	128	49	38	12	1	8
93K	373	31	8	16	1	5
93L	80	283	35	14	5	35
93M	187	63	34	27	1	4
93N	448	117	26	36	2	6
93O	185	47	25	31	1	4
94D	111	20	18	25	1	3
94J	41	6	15	42	0	0
94G	254	34	13	27	1	4
94H	182	0	0		0	0

Environmental Baseline

In general, the current status of MCR steelhead populations is the result of several long-term, human-induced factors (*e.g.* habitat degradation, water diversions, hydropower dams) that serve to exacerbate the adverse effects of natural environmental variability from such factors as drought, floods, and poor ocean conditions. Within the action area, habitat degradation has occurred from timber harvest, road construction, mining, and livestock grazing.

Environmental baseline conditions within the action area were evaluated for the subject actions at the project level and watershed scales. The results of this evaluation, based on the “matrix of pathways and indicators” (MPI) described in *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NOAA Fisheries 1996), follow. This method assesses the current condition of instream, riparian, and watershed factors

that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species.

In the NFJD subbasin (4th code HUC), five habitat indicators in the MPI were rated as “functioning appropriately” (chemical contaminants/nutrients, physical barriers, large pools, off-channel habitat, and disturbance history). Eleven were rated as “functioning at risk” (sediment, substrate embeddedness, large woody debris, pool frequency and quality, refugia, wetted width/maximum depth ratio, streambank condition, floodplain connectivity, change in peak/base flows, drainage network increase, and riparian habitat conservation areas.) Two indicators, temperature and road density/location, were rated as “not properly functioning”.

In the NFJD River watershed (5th code HUC), five habitat indicators were rated as “functioning appropriately” (chemical contaminants/nutrients, large pools, off-channel habitat, wetted width/maximum depth ratio, and riparian conservation areas) while sediment, physical barriers, substrate embeddedness, streambank condition, floodplain connectivity, drainage network increase, road density and location, and disturbance history were rated as “functioning at risk”. Temperature, large woody debris, pool frequency and quality, were rated as “not properly functioning” while refugia, change in peak/base flows, and disturbance history were not rated due to lack of data.

In the Granite Creek watershed (5th code HUC), large pools, off-channel habitat, wetted width/maximum depth ratio, streambank condition, and disturbance history were rated as “functioning appropriately” while temperature, sediment, chemical contaminants/nutrients, physical barriers, substrate embeddedness, large woody debris, pool frequency and quality, drainage network increase, and riparian conservation areas were rated as “functioning at risk”. Floodplain connectivity, road density and location were rated as “not properly functioning” while refugia, change in peak/base flows, and disturbance regime were not rated due to lack of data. Floodplain connectivity was rated as “not properly functioning” due to the presence of dredge piles from historic mining operations. Many of these historic dredge piles are positioned very near the stream and prevent the stream from overflowing into the floodplain during high flow events. The position of these historic dredge piles is also between the stream and currently active mining actions. This often creates a barrier which prevents potential effects from current operations reaching the stream.

Additionally, the Pete Mann ditch is found in the Granite Creek watershed. It often completely diverts Lightning Creek, Salmon Creek, and the East Fork Clear Creek (all Middle Columbia River steelhead streams) into a non-anadromous basin. Although the UNF did not rate change in peak/base flows, it is likely that this indicator is functioning either “at risk” or “not properly functioning” due to the presence of this ditch. The UNF has provided recent information which indicates that there is a Federal nexus (Special Use Permit) for section 7 consultation on this

ditch. As such, there will be a future Federal action and section 7 consultation to address this ditch².

In the Upper NFJD River watershed (5th code HUC) large pools, off-channel habitat, and road density and location were rated as “functioning appropriately” while temperature, sediment, chemical contaminants/nutrients, large woody debris, streambank stability, and drainage network increase were rated as “functioning at risk”. Substrate embeddedness and pool frequency and quality were rated as “not properly functioning” while physical barriers, wetted width/maximum depth ratio, floodplain connectivity, change in peak/base flows, disturbance history, riparian conservation areas, and disturbance regime were not rated due to lack of data. A summary of the above information can be found in Table 5.

The environmental baseline conditions for each habitat indicator in the MPI are described in the BA and incorporated into this Opinion by reference. These habitat indicators provide the template for assessing the essential elements of MCR habitat. This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species. An assessment of the essential features of MCR steelhead habitat is obtained by using the MPI process to evaluate whether aquatic habitat is properly functioning.

1.4.2.1 Subwatershed (6th Code HUC) Specific Conditions

Data for many of the MPI indicators were not available to the UNF and WWNF when developing the BA. The data that were available were used in the MPI, and are summarized below by subwatershed.

North Fork John Day/Turner (35C)

Chemical contaminants were rated as functioning appropriately while floodplain connectivity, drainage network increase, road density and location, and disturbance history were rated as functioning at risk. Riparian conservation areas were rated as not properly functioning.

North Fork John Day/Otter (35D)

Temperature at the mouth of Otter Creek was functioning appropriately. Chemical contaminants/nutrients, off-channel habitat, large woody debris, and wetted width/maximum depth were functioning appropriately. Substrate embeddedness, drainage network increase, road density and location, disturbance history, and riparian conservation areas were all rated as functioning at risk.

²See section 1.1 for further explanation of future ESA section 7 consultation on the Pete Mann ditch

Table 5. Summary of Subbasin and Watershed Conditions

MPI PARAMETERS ¹		North Fork John Day Subbasin (4th code HUC)	WATERSHEDS		
			NFJD River	Granite Creek	Upper NFJD River
Water Quality	Temperature	N	N	R	R
	Sediment	R	R	R	R
	Chem/Cont.	A	A	R	R
Access	Physical barriers	A	R	R	U
Habitat Elements	Substrate Embeddedness	R	R	R	N
	Large Woody Debris	R	N	R	R
	Pool Freq./Quality	R	N	R	N
	Large Pools	A	A	A	A
	Off Channel Habitat	A	A	A	A
	Refugia	R	U	U	U
Channel Conditions & Dynamics	Width/depth ratios	R	A	U	U
	Streambank Condition	R	R	A	R
	Floodplain connectivity	R	R	N	U
Flow/ Hydrology	Change in Peak Base Flow	R	U	U	U
	Drainage Network Increase	R	R	R	R
Watershed Condition	Road Density and Location	N	R	U	A
	Disturbance History	A	R	A	U
	RHCAs	R	A	R	U
¹ The condition of each MPI parameter is indicated in the following manner: A= functioning appropriately, R= functioning at risk, N= not properly functioning, U=data unavailable					

Lower Granite Creek (93A)

Off-channel habitat, streambank condition, and disturbance history were rated as functioning appropriately. Temperature, chemical contaminants/nutrients, large woody debris, pool frequency and quality, drainage network increase, and riparian conservation areas were rated as functioning at risk. Sediment and road density and location were rated as not properly functioning.

Ten Cent Creek (93B)

Temperature, substrate embeddedness, large woody debris, pool frequency and quality, drainage network increase, disturbance history, and riparian conservation areas were rated as functioning at risk. Road density and location was rated as not properly functioning.

Upper Granite Creek (93C)

Large woody debris, and disturbance history were rated as functioning appropriately. Temperature, substrate embeddedness, pool frequency and quality, and riparian conservation areas were rated as functioning at risk. Drainage network increase and road density and location were rated as not properly functioning.

Ruby Creek (93H)

Streambank stability, drainage network increase, and disturbance history were rated as functioning appropriately. Large woody debris, pool frequency and quality, road density and location, and riparian conservation areas were rated as functioning at risk. Sediment was rated as not properly functioning.

Middle Clear Creek (93J)

Temperature, pool frequency and quality, large pools, streambank condition, drainage network increase, and riparian conservation areas were rated as functioning appropriately. Sediment, physical barriers, and large woody debris were rated as functioning at risk. Road density and location was rated as not properly functioning.

Lightning Creek (93K)

Large woody debris, pool frequency and quality, and riparian conservation areas were rated as functioning appropriately. Drainage network increase was rated as functioning at risk while sediment was rated as not properly functioning.

Olive Creek (93L)

Temperature, streambank condition were rated as functioning appropriately while substrate embeddedness, large woody debris, and pool frequency and quality were rated as functioning at risk. Drainage network increase and road density and location were rated as not properly functioning.

Beaver Creek (93M)

Temperature, substrate embeddedness, large woody debris, pool frequency and quality, and streambank condition, were rated as functioning at risk. Drainage network increase and road density and location were rated as not properly functioning.

Lower Bull Run Creek (93N)

Large pools were rated as functioning appropriately while temperature, substrate embeddedness, large woody debris, pool frequency and quality, and streambank condition were rated as functioning at risk. Drainage network increase and road density and location were rated as functioning at inappropriate risk.

Upper Bull Run Creek (93O)

Temperature was rated as functioning appropriately while substrate embeddedness, large woody debris, and streambank condition were rated as functioning at risk. Pool frequency and quality, drainage network increase, and road density and location rated as functioning at inappropriate risk.

North Fork John Day River/Thornburg (94D)

Large woody debris, drainage network increase, and road density and location were rated as functioning appropriately while substrate embeddedness was rated as functioning at risk.

Trail Creek (94F)

Temperature, substrate embeddedness, large woody debris, streambank condition, and drainage network increase were rated as functioning at risk while road density and location was rated as not properly functioning.

North Fork John Day River/Mile 101 (94G)

Temperature, substrate embeddedness, and drainage network increase were rated as functioning at risk while large woody debris, streambank condition, and road density and location were rated as not properly functioning.

Baldy Creek (94H)

Large pools were rated as functioning appropriately while temperature substrate embeddedness, streambank condition, and drainage network increase were rated as functioning at risk. Large woody debris was rated as not properly functioning.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Actions

The effects determination on habitat parameters in the BA was made using a method for evaluating current aquatic conditions (the environmental baseline), and predicting effects of the action on them. The process described in NOAA Fisheries (1996) was used to provide adequate information in a tabular form in the BA for NOAA Fisheries to determine the effects of actions

subject to consultation. The expected effects of the actions are expressed in terms of how they restore, maintain, or degrade each of the 18 aquatic habitat factors in the action area, as described in the “checklist for documenting environmental baseline and effects of the action” (checklist) completed for each action and watershed. The results of the completed checklist for the action provides a starting point for determining the overall effect of the action on the environmental baseline in the action area, and for assessing effects on essential elements of MCR habitat. Implementation of the proposed minerals actions in the watersheds addressed in this Opinion is expected to degrade one or more of the aquatic habitat parameters considered in the MPI, thus triggering this formal consultation.

Impacts of minerals operations to stream habitat and fish populations can be separated into direct and indirect effects. Direct effects relevant to these mineral operations are those which contribute to the immediate loss or harm to individual fish or embryos (*e.g.*, entraining a juvenile in a suction dredge or trapping juveniles in tire ruts leading to a ford which is subsequently dewatered when flows in the main channel decline). Indirect effects relevant to these mineral operations are those impacts which occur at a later time, causing loss of specific habitat features (*e.g.*, undercut banks, sedimentation of spawning beds), localized reductions in habitat quality (*e.g.*, sedimentation, loss of riparian vegetation, changes in channel stability and structure), and ultimately cause loss or reductions of individuals or entire populations of fish, or localized to widespread reductions in habitat quantity and/or quality. By restricting certain types of activities such as in-water work to times when spawning activity is not occurring and flows are low, direct or indirect effects to MCR steelhead and their habitat can be minimized.

1.5.1.1 Direct Effects

Direct effects to MCR steelhead from these minerals operations may occur by several mechanisms. Suction dredges may kill fish eggs and fish larvae. Griffith and Andrews (1981) found that entrainment of cutthroat trout eggs in a small suction dredge caused 100% mortality of un-eyed stages and a range of 29% to 62% mortality among eyed stages. Harvey and Lisle (1998) note that fish eggs, larvae, and fry that survive passage through a suction dredge would be subject to high mortality from subsequent predation. These results strongly suggest that suction dredging is harmful to salmonids in early life stages and that steelhead larvae and fry would be susceptible to harm and harassment if they occur in streams where suction dredging is actively taking place. Juvenile and adult fishes are likely to avoid or survive passage through a suction dredge (Harvey and Lisle, 1998). However, the use of suction dredges is prohibited by the state of Oregon until after July 15 (due to ODFW in-water work window restrictions) in these areas, and it is likely that MCR steelhead have emerged from the redds by that time.

Drilling fluids, sometimes used in great quantities at mining sites, were found to be toxic to rainbow trout at concentrations less than 100 mg/L (Sprague and Logan 1979). Chemicals used in processing and recovery of metalliferous deposits may also be toxic. While it is unlikely that large numbers of fish inhabiting large, deep bodies of water would be killed by the toxic effects of spilled petroleum, fish kills may be caused by large amounts of oil moving rapidly in shallow streams. Oils and petroleum products vary considerably in their toxicity, and the sensitivity of fish to petroleum chemical varies among species. The sublethal effects of oil on fish include

changes in heart and respiratory rates, gill hyperplasia, enlarged liver, reduced growth, fin erosion, impaired endocrine system, and a variety of biochemical, blood, and cellular changes, and behavioral responses (Chambers *et al.* 1979; Barnett and Toews 1978; Weber *et al.* 1981). Therefore, a fuel spill into the stream related to a mining operation could directly poison steelhead, or could indirectly affect steelhead by poisoning invertebrate or vertebrate prey species.

Tire ruts leading to fords across streams with MCR steelhead rearing habitat may create another potential direct effect. Field observations at several of these fords revealed MCR juveniles using the shallow water habitat created within these fords as rearing habitat. As spring high flows recede, it is possible that MCR steelhead juveniles could be stranded in pools created by these ruts, thus being prevented from returning to the stream. Additionally, using fords prior to MCR steelhead emergence might either directly crush steelhead redds or cause turbidity which could cover a downstream redd and suffocate eggs or alevins.

Minerals operations also often use water from the stream for processing. If not properly screened, this could lead to possible entrainment of MCR steelhead in the pumping apparatus. The reduction in instream flow could also adversely affect steelhead rearing habitat or fish passage.

1.5.1.2 Indirect Effects

Indirect effects to MCR steelhead from minerals operations may occur via several mechanisms. Suction dredging suspends fine sediment in the water column which may have downstream effects (Harvey and Lisle, 1998). Harvey and Lisle (1998) also note, however, that the amount of sediment suspended by a dredge would be insignificant compared to the suspended sediment transported during a spring runoff event and that the effects from the sediment are seldom realized very far downstream. Suction dredges may also destabilize the gravel in riffles causing them to be transported downstream during the next runoff event and fill in the pools which provide valuable rearing habitat (Thomas, 1985). Individuals operating suction dredges often remove cobbles and boulders that are too large to be processed by the dredge and also may move or remove large woody debris. All of these actions would change stream hydraulics in the area of operations and potentially reduce the quality and quantity of steelhead rearing habitat (Harvey and Lisle, 1998). Large numbers of dredges operating in a stream could therefore significantly affect channel morphology which could affect the quality of both spawning and rearing habitat for MCR steelhead.

The roads leading to fords are often deeply rutted, which may provide a ready source of fine sediment that may diminish the quality of both spawning and rearing habitat for MCR steelhead. They also create unstable banks in the area of the ford. In addition, if the road approach is constructed at an improper angle and the elevation of the road is at or below stream level, the roads may capture all or part of the flow from the main stream channel. This may lead to de-watering of the main channel and the subsequent diminishment of MCR steelhead spawning and rearing habitat. Minerals actions also often use water from the stream for processing. This

might lead to a dewatering of the channel and the subsequent diminishment of MCR steelhead spawning and rearing habitat. Dewatering may also lead to an increase in stream temperatures which could adversely affect MCR steelhead rearing habitat.

Many minerals actions involve the use of heavy machinery in the RHCA which potentially has the effect of disrupting floodplain function. When properly vegetated, floodplains may provide large woody debris, allochthonous input, and shade to streams. Floodplains also play a key role in sediment storage during high flow events (Spence *et al.*, 1996). The use of heavy equipment may also compact soil which has the potential to adversely affect vegetative recovery and water infiltration rates. However, historic tailing piles, common in these watersheds and which occur at some of the mineral sites, often serve to prevent the potentially adverse effects from current mining-related activities from reaching the stream system by acting as a barrier to sediment.

1.5.1.3 Subwatershed (6th Code HUC) Specific Effects

The specific reasons these operations were identified as LAA MCR steelhead are detailed above in Table 1. What follows is an assessment of how many and what type of these operations there are in each of the subwatersheds affected. Those operations that involve especially high risks of adverse effects are discussed in more detail.

North Fork John Day/Turner (35C)

There is only one proposed mining operation (Apache 1) in this watershed and its rationale for being LAA is the use of a suction dredge in the North Fork John Day River. This might adversely affect the habitat parameters referenced above in section 1.5.1.2.

North Fork John Day/Otter (35D)

There is only one proposed mining operation (Camp Creek Placers) in this watershed and its rationale for being LAA is the withdrawal of water from Camp Creek. The claimant has a 1 cubic foot per second (cfs) water right and base flows at the mouth of Camp Creek are approximately 1 cfs. It is, however, referenced that the claimant does not use the full 1 cfs right. The potential effects to MCR steelhead include the risk of entrainment of juveniles in the pumping apparatus and the diminishment of habitat through flow depletion. The operator also proposes to build a road greater than 300 feet from Camp Creek on a steep hill which, although not referenced in the BA, could contribute fine sediment into the stream system.

Lower Granite Creek (93A)

There are six minerals operations in this subwatershed that are LAA MCR steelhead (Bad Dog, Hopeful 2 and 3, Republican Comeback #10 and #11, Republican Comeback #8 East End and Black Bar Gold, Republican Comeback #6, and the Republican Comeback #7. Four of these operations propose the use of heavy equipment in RHCAs, and five propose using a suction dredge in their operations. Four of these operations use a ford in accessing the mine site and one proposes to withdraw water from the stream system. The effects of these activities are summarized above.

Ten Cent Creek (93B)

There are two proposed minerals operations in this subwatershed that are LAA MCR steelhead (East Ten Cent Creek Claim and the Tar Heel Ten Cent). Both propose the use of heavy equipment in the RHCA. The Tar Heel Ten Cent proposes using heavy equipment within 10 feet of Ten Cent Creek which will remove grasses, shrubs, and many small trees and significantly elevate the risk of introducing excessive fine sediment into the stream.

Upper Granite Creek (93C)

There are 15 proposed minerals operations in this subwatershed that are LAA MCR steelhead (4-S Lode, 4-S Placer Lode, Blue Sky, Boulder Creek Placer, Eddy 1, 2, and 3, Gold Fraction Lode, Chipman Creek Placer Mine, Land L #1, Little Cross, M&L Placer Claims, Magnolia Mine Lode Claim, Muffin Placers, Petro, Rock-a-Gold, Tetra Milling, Troy D Suction Dredging, and the Yellow Gold Testing/Mining). Nine of these operations propose the use of heavy machinery in the RHCA and 11 propose the use of suction dredges in their operations. Three use fords to access activities and the access road for two of these operations has been judged to be causing adverse effects. Two operations propose to withdraw water from the stream system in its operations. The 4-S Placer Lode proposes to reinforce a weak area in the streambank using large rock riprap. This riprap has the potential to adversely affect channel function and form. The road used to access the Eddy 1, 2, and 3/Gold Fraction Lode/Chipman Creek Placer Mine and the Magnolia Mine Lode Claim has diverted a significant portion of Granite Creek. The Tetra Milling project description references the risk of sediment delivery to Boulder Creek from Last Chance Creek which runs through a leaky pipe.

Ruby Creek (93H)

There are two operations in this subwatershed that are LAA MCR steelhead (Aurelia Claim and the North Tram). Both use heavy equipment in the RHCA, use a ford to access the claim, and have an access road that impacts steelhead habitat. In addition, the Aurelia Claim withdraws a small amount of water from Ruby Creek in its processing operations. Ruby Creek flows for approximately 250 feet down the access road for both of these operations. The cabin which is used in both of these operations is approximately 10 feet from Ruby Creek and its use appears to be contributing to bank erosion.

Middle Clear Creek (93J)

There are three operations in this subwatershed that are LAA MCR steelhead (Bunch Bucket 2, Clear Ruby Placers, and the Grubstake Placer). The Bunch Bucket 2 and Grubstake Placer propose to use heavy equipment within the RHCA while the Grubstake Placer also proposes the use of a suction dredge. A ford is used to access the Clear Ruby Placers and water is withdrawn from Clear Creek on the Bunch Bucket 2. Ruby Creek flows for approximately 250 feet down the access road for the Clear Ruby Placers. The cabin which is used in this operation is approximately 10 feet from Ruby Creek and its use appears to be contributing to bank erosion (same claimant as for the Aurelia and North Tram above).

Lightning Creek (93K)

There is one operation in this subwatershed, the Lightning Creek Placers, that is LAA MCR steelhead. This operation proposes to use heavy equipment within the RHCA.

Olive Creek (93L)

There are eight operations in this subwatershed that are LAA MCR steelhead (Belvadear, L&H, Lower McWillis, McWillis Gulch Mining, Olive Placer, Olive Tone, Placer, Pam's Papa, and the Quartz Gulch Testing/Mining). The Belvadear, L&H, Lower McWillis, Olive Tone Placer, and Quartz Gulch Testing/Mining all propose to use heavy equipment in RHCAs. Six operations (all except Lower McWillis and McWillis Gulch Mining) propose the use of a suction dredge while fords are used to access operations for the L&H and the Olive Tone Placer.

Beaver Creek (93M)

There is one operation in this subwatershed that is LAA MCR steelhead (Eureka). It proposes the use of heavy equipment in the RHCA and the use of a suction dredge in its operations.

Lower Bull Run Creek (93N)

There are seven operations in this subwatershed that are LAA MCR steelhead (Bullrun Placers, Darla J, Freestone Placer, Kaser Claims, Lori #1, Onion Placer, Swamp Placer). The Bullrun Placers and Onion Placer propose the use of heavy equipment in RHCAs. Five operations (all except the Lori #1 and the Onion Placer) propose the use of suction dredges and the Bullrun Placers proposes to withdraw water from the stream system in its operations.

Upper Bull Run Creek (93O)

There are four operations in this subwatershed that are LAA MCR steelhead (Bullrun Placers (Proposed), Channel Placer, Freestone Placer Testing Proposed, and Griffith/Harris Placer). The Bullrun Placers (Proposed), Freestone Placer Testing Proposed, and Griffith/Harris Placer propose the use of heavy equipment in the RHCA. All four operations propose the use of suction dredges.

North Fork John Day River/Thornburg (94D)

There is one operation in this subwatershed that is LAA MCR steelhead (Blue Heaven 1 and 2). The operation proposes the use of a suction dredge in its operations.

Trail Creek (94F)

There are eight operations in this subwatershed that are LAA MCR steelhead (Big Indian, French Gulch, Griffin Placers, Lovestock Claim, My Love Placer, Scott Placers, South Trail Placers, and the Tassie Lea Placer). Four propose the use of heavy equipment in the RHCA (Big Indian, My Love Placer, Scott Placers, and the Tassie Lea Placer) while five (Griffin Placers, My Love Placer, Scott Placers, South Trail Placers, and Tassie Lea Placer) propose to use suction dredges in their operations. The Big Indian and Tassie Lea Placer propose to withdraw water from the stream system in their operations.

North Fork John Day River/Mile 101 (94G)

There are seven operations in this subwatershed that are LAA MCR steelhead (Cabell City Lodes, Centennial Lode/West Point, Centennial Placer, Lucky Strike Placers, Paddy D Placer Claims, Rainbow #1, and the Rainbow Placer). The Cabell City Lodes, Lucky Strike Placers, and Paddy D Placer Claims propose the use of heavy equipment in RHCAs and the Lucky Strike Placers, Rainbow #1, and Rainbow Placer propose to use suction dredges in their operations. The Paddy D uses a ford to access its operations while the Cabell City Lodes, Centennial Placer, and Lucky Strike Placers use water from the stream system in their operations.

Baldy Creek (94H)

There is one operation in this subwatershed that is LAA MCR steelhead (Lead Lode). This operation proposes the use of a ford to access operations and has three portals in the RHCA. One of these portals is a wet portal and water is piped through the mining area to keep it clean when it enters Limber Creek. Water quality monitoring is conducted whenever the ore type changes.

1.5.1.4 Collective Effects

Several subwatersheds have multiple mining operations occurring and all of the activities covered in this Opinion occur in three watersheds (Granite, NFJD, and upper NFJD). Due to the close proximity of the operations to one another, the additive or collective effects of these activities were considered at a watershed scale.

The negative effects on riparian areas caused by the individual mining actions will be localized and for the most part, limited to the areas where the activities are occurring. Sediment control measures and contaminant spill prevention measures include in the POOs for the mining activities minimize the chance that these substances will reach streams. Water withdrawals for mining operations are minimal and not expected to reduce instream flows to the point that adverse effects to MCR steelhead would occur. Protective measures built into the POOs of the mining claims prohibit any action that would block fish passage. For these reasons, upstream and downstream effects of the mining activities will be minimal.

Past placer and dredge mining activities have significantly impacted riparian areas. Many riparian areas are dominated by piles of gravel and fine sediments left by the previous dredging of streams. These piles preclude the natural re-establishment of riparian vegetation and also isolate the stream from its floodplain. In many cases, however, the dredge tailings also prevent sediment or contaminants generated from current mining operations from reaching streams.

The surface disturbance created by the proposed mining activities is limited and often occurs in areas where previous disturbance has left riparian areas in poor condition. The 38 mining operations proposing use of heavy equipment in RHCAs will disturb no more than one acre annually, with disturbance on most claims limited to ½ acre. Some activities may result in additional localized riparian disturbance or will potentially limit the re-establishment of riparian vegetation in previously disturbed areas. However, management requirements found in the POOs for each claim require that reclamation of riparian areas be ongoing within that claim.

Reclamation efforts such as filling test holes and planting grasses, bushes, and trees should ensure that the additional riparian disturbance is temporary. As reclamation efforts are carried out, as specified in POOs, the proposed mining activities are not expected to result in the permanent degradation of any MCR steelhead habitat indicators at the watershed scale.

1.5.2 Cumulative Effects

"Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The "action area" for this consultation is the NFJD subbasin from the headwaters where these activities are located downstream to the confluence of the NFJD and the Middle Fork John Day River. These streams contain spawning, rearing, or migratory habitat for MCR steelhead.

The BA identifies road building and maintenance, timber management, minerals management, rangeland management, agricultural management, recreation and tourism, and water use and control as non-federal actions that are reasonably certain to occur within the action area. It identifies risks to MCR steelhead from these activities as being either low, moderate, or high. The actions that were rated having a high risk to MCR steelhead were road building and maintenance, timber management, minerals management, rangeland management, and agricultural management. It was noted that effects from recreation and tourism were "limited for the most part" while water use and control was not rated. The primary rationale behind the high ratings was the lack of Federal regulatory control over these activities and the uncertainty about the potential effects that might be caused by these activities.

Several of the subwatersheds in which the proposed minerals operations take place have significant (25% or greater) ownership of private land within RHCAs (Table 4). These are the North Fork John Day/Otter (35D), Lower Granite Creek (93A), Middle Clear Creek (93J), Olive Creek (93L), Beaver Creek (93M), Lower Bull Run Creek (93N) and Upper Bull Run Creek (93O). The primary private use on John Day/Otter is ranching (personal communication, Marjorie McVeigh, NFJD Ranger District). The BA identifies that a significant amount of the private land in the other subwatersheds is patented mining claims. The Granite Creek subbasin (93) includes the Alamo Mining District which is characterized by many placer and lode mines. The extent of private mining actions is not specifically analyzed in the BA, but field reviews by NOAA Fisheries biologists suggest that a significant amount of private land mining activity still takes place.

Another non-federal action that takes place in these subwatersheds is recreational suction dredging. The extent of these activities is not referenced in the BA. The regulatory link to these actions is an Oregon state permit (DEQ General Permit 700). A potential effect from recreational dredging is the de-stabilization of riffles and the filling of pools (Harvey and Lisle, 1998). The presence of a small number of recreational dredges would not likely disrupt stream processes but the combined effects of a large number of recreational dredges operating in a stream within a single season could have significant adverse effects.

Significant improvement in MCR steelhead reproductive success outside of federally-administered land is unlikely without changes in mining, grazing, agricultural, and other practices occurring within these non-federal riparian areas in the John Day River basin. Given that the MCR steelhead is listed as threatened, NOAA Fisheries assumes that non-federal land owners will take steps to curtail or avoid land management practices that would result in the take of MCR steelhead. Until improvements in non-federal land management practices are actually implemented, NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

1.6 Conclusion

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. As previously described, the analysis involves the definition of the biological requirements and current status of the listed species, and the evaluation of the relevance of the environmental baseline to the species' current status. Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. For the subject actions, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the actions and considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline. If NOAA Fisheries finds that the action is likely to jeopardize, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

NOAA Fisheries has determined that, when the effects of the subject actions addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead at the population or ESU scale. This conclusion was reached primarily because: (1) Potential adverse impacts from the use of heavy equipment in RHCAs are small in scale due to the limited size of the proposed activities and reclamation efforts should ensure that additional riparian disturbance is temporary; (2) the effects from proposed suction dredging are expected to be small in scale; (3) there are a limited number of fords used in these operations and the use of the fords is light; (4) only a few of the fords in use have deep ruts connected to the stream and the number of MCR juveniles potentially trapped in these ruts would be very small; (5) the water withdrawals from mining operations is generally very small and it is likely that most intake pipes are screened to some level; and (6) the total annual disturbance, or combined effect, from the proposed minerals actions is less than 0.0006 (0.06%) of the total acreage of the North Fork John Day basin. In reaching these conclusions, NOAA Fisheries has utilized the best scientific and commercial data available as documented herein and by the BA describing the Federal actions.

1.7 Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NOAA Fisheries believes that the following conservation recommendation regarding minerals actions should be implemented:

1. The UNF and WWNF should review their minerals budget annually and seek additional funding opportunities for restoration activities. Top priority should be given to restoring riparian areas along streams containing MCR steelhead habitat which would benefit from projects designed to repair habitat damage from previous mining actions.
2. The UNF and WWNF should provide technical support to mining operators to assist in their efforts of restoring floodplains and streams to a properly functioning habitat condition.

1.8 Reinitiation of Consultation

Reinitiation of consultation is required if: (1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR. 402.16); or (4) the amount or extent of take specified in the Incidental Take Statement is exceeded. Additionally, reinitiation of consultation will be required for the subject action after FY2007. To reinitiate consultation, please contact Randy Tweten of the Oregon Habitat Branch at 541.975.1835 ext 229.

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental

to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of Take

NOAA Fisheries anticipates that the subject minerals operations covered by this Opinion are reasonably certain to result in incidental take of MCR steelhead because of the adverse effects from the actions described above. The NFJD subbasin is an important spawning and rearing area for MCR steelhead, with juvenile members of the species widely distributed throughout the subbasin at all times of the year. It is reasonably certain that juvenile MCR steelhead will be present at all times of the year at, downstream, and upstream of the mining operations addressed in this Opinion.

As discussed in section 1.5.1 of this Opinion, the operation of suction dredges can result in injury or death to MCR steelhead alevins and cause harassment of juvenile fish by introducing sediment into the water column. Removal of boulders and large woody debris associated with suction dredging can have adverse effects to the physical habitat conditions and hydrology of the stream. Operation of heavy machinery and mining equipment in or near streams has the potential to introduce lethal chemical contaminants into these systems. Operation of heavy machinery in RHCAs can also damage riparian vegetation and reduce streambank stability. Withdrawal of water related to mining activities will reduce instream flows, could lead to increased water temperature, and could entrain juvenile MCR steelhead. The use of fords to access mining claims can strand MCR steelhead as described in section 1.5.1 of this Opinion. The maintenance and use of roads to access mining operations can have adverse effects on MCR steelhead habitat. Roads located in RHCAs preclude the growth of riparian vegetation and compact soils. The roads and associated ditches also concentrate runoff, leading to sediment delivery to streams. This sediment can fill in pools and bury suitable spawning substrates. Some of the mining operations are causing site specific adverse effects to MCR steelhead or their habitat. These include areas of decreased bank stability, leaking waste pipes, or poorly designed roads. These site specific effects may result in take by introducing sediment or contaminants into the water column.

Take associated with habitat-related effects of actions such as these are largely unquantifiable and are not expected to have a measurable, long-term effect at the population or ESU scale. Therefore, even though NOAA Fisheries expects some incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take of listed fish at any life stage. The authorized take includes only take caused by the proposed or continuing actions as described in the BA.

2.2 Effect of the Take

In this Opinion, NOAA Fisheries has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead.

2.3 Reasonable and Prudent Measures

NOAA Fisheries believes the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from the actions covered by this Opinion. The UNF and WWNF shall:

1. Minimize the likelihood of incidental take resulting from mining operations that propose the use of heavy equipment in RHCAs.
2. Minimize the likelihood of incidental take resulting from mining operations that propose the use of a suction dredge in their operations.
3. Minimize the likelihood of incidental take resulting from mining operations that propose the use of a ford to access their operations.
4. Minimize the likelihood of incidental take resulting from mining operations that propose to withdraw water from the stream system in their operations.
5. Minimize the likelihood of incidental take resulting from mining operations that utilize access roads that adversely affect MCR steelhead.
6. Minimize the likelihood of incidental take resulting from mining operations that have other, site-specific adverse effects associated with their operations.
7. Complete a comprehensive monitoring and reporting program to ensure implementation of requirements found in this Opinion.

2.4 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the UNF and WWNF must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (use of heavy equipment), the UNF and WWNF shall:
 - a. Conduct an initial monitoring examination of each mining operations that proposes the use of heavy equipment in RHCAs. The initial examination will occur early in the work season and will consist of the following activities:

- i. Assessing the compliance of the occurring activities with the POO for that claim.
 - ii. Observing the extent of adverse effects to MCR steelhead and their habitat. If effects are occurring beyond those considered in this Opinion or described in the BA, reinitiation of consultation would be required.
 - b. Conduct a monitoring examination of each mineral operation that proposes the use of heavy equipment in RHCAs at the end of the season, after operations have concluded for the year. This examination should include:
 - i. Assess compliance of the activities that have occurred for that season with the POO for that claim
 - ii. Observe the extent of adverse effects to MCR steelhead and their habitat. If effects occur beyond those considered in this Opinion or described in the BA, reinitiation of consultation would be required.
 - iii. Prepare a summary of adverse effects that have occurred or are occurring to MCR steelhead or their habitats. Provide this summary to the Level 1 team in the annual monitoring report.
 - c. Conduct any additional monitoring throughout the work season necessary to ensure that minerals operations adhere to their plan of operation and adverse effects beyond those considered in this Opinion and described in the BA do not occur.
- 2. To implement reasonable and prudent measure #2 (suction dredging), the UNF and WWNF shall:
 - a. Develop a sampling protocol to document the amount of suction dredging occurring in the Granite Creek (93) and Upper North Fork John Day (94) watersheds. This protocol should be developed in coordination with the Level 1 team. Results from the protocol will be reported to the Level 1 team in the annual monitoring report. Information from the report will be included in subsequent BAs for mining operations on the UNF and WWNF.
- 3. To implement reasonable and prudent measure #3 (ford usage), the UNF and WWNF shall:
 - a. Restrict the use of fords to the ODFW in-water work window. Should the claimant desire to use the ford prior to the work-window opening, a fisheries biologist from the UNF or WWNF shall inspect the ford and 75 feet upstream and downstream for the presence of MCR steelhead redds (it is unlikely that sediment produced from a vehicle will be transported further than 75 feet). If redds are located, the UNF and WWNF shall prohibit use of the ford until after the work-window opens. If no redds are located, use of the ford may be allowed.
 - b. Inspect each ford before the work season begins (prior to July 15) to determine the likelihood of MCR steelhead juveniles being stranded in pools created by tire ruts. If juveniles are located during the inspection, a fisheries biologist will capture and move the juveniles to appropriate habitat. All tire ruts or areas of active erosion at each ford, regardless of the presence of juveniles, will be filled

with clean gravel before they are used for the season. The gravel shall be sufficient to bring the grade of tire ruts or areas of erosion to match the grade of the surrounding area. A review of these fords shall be conducted at the end of each operating season to assess the success of the graveling in preventing stranding of juvenile MCR steelhead. The results of this review will be included in the annual monitoring report.

4. To implement reasonable and prudent measure #4 (water withdrawal), the UNF and WWNF shall:
 - a. Require water intakes for mining authorized under this Opinion to have fish screens installed, operated and maintained according to NOAA Fisheries' fish screen criteria (NOAA Fisheries 1996a).
 - b. Ensure that instream flows in reaches below mining water diversions are adequate to provide suitable MCR steelhead habitat.
5. To implement reasonable and prudent measure #5 (access roads), the UNF and WWNF shall:
 - a. Conduct an interdisciplinary assessment of each of the roads identified as adversely affecting MCR steelhead. This assessment shall address the specific effects each of these roads is having on MCR steelhead and develop options to minimize or eliminate these effects. This assessment should be coordinated and reviewed by the Level 1 team.
 - b. Seek adequate funding to implement plans to minimize or eliminate adverse effects to MCR steelhead resulting from these roads.
6. To implement reasonable and prudent measure #6 (site-specific effects), the UNF and WWNF shall:
 - a. Monitor the road construction on the Camp Creek Placers operation. Measures to minimize sediment delivery shall be implemented. Results of the monitoring shall be reported to the Level 1 team in the annual monitoring report.
 - b. Monitor operations on the Tar Heel Ten Cent operation at least twice a month during operations (this replaces Term and Condition 1b above for this operation). Implement sediment control measures that will ensure sediment delivery to the stream system is minimized to the greatest degree possible.
 - c. The claimant shall be required to replace all trees and shrubs removed. Results of the monitoring will be reported to Level 1 in the annual monitoring report.
 - d. Provide a fisheries biologist and hydrologist to analyze the leaky pipe on the Tetra Milling project which has the potential to contribute sediment to Boulder Creek. A report on the condition of the pipe and the potential remedies (if necessary) shall be presented to the Level 1 team in the annual monitoring report.
 - e. Provide a fisheries biologist and hydrologist to analyze the sediment delivery from the area surrounding the cabin which is used in the Aurelia Claim, North Tram, and the Clear Ruby Placers. Measures to minimize this sediment delivery shall be implemented during the 2002 work season. A report on the condition of

the area surrounding the cabin and the mitigation measures implemented shall be presented to the Level 1 team in the annual monitoring report.

7. To implement reasonable and prudent measure #7 (monitoring and reporting), the UNF and WWNF shall:
- a. Prepare an annual monitoring report of mineral activities addressed in this Opinion.
 - b. The report will contain the following information:
 - i. All monitoring and reporting requirements found in the above terms and conditions shall be included in the report.
 - ii. A summary of how the UNF and WWNF have exercised their full regulatory authority to minimize the effects of mining operations that do not have a POO and reclamation bond posted on MCR steelhead and their habitat. This report shall also contain a schedule to move all of these operations, as appropriate, into a POO.
 - iii. A summary of the extent of the Forest Services's regulatory authority on all operations that do not have a NOI. This report shall also contain a schedule to move all of these operations, as appropriate, into a NOI or POO. This report shall be presented to the Level 1 team in the annual monitoring report.
 - iv. Progress made towards establishing NOI or POO for those operations that the Forest Service has determined are still in need of these documents.
 - v. Summary of adverse mining impacts to MCR steelhead and the mitigation measures taken to minimize these effects.
 - vi. A stream survey protocol to assess the combined effects of minerals operations in the Lower Granite Creek (93A), Middle Clear Creek (93J), Olive Creek (93L), Beaver Creek (93M), Lower Bull Run Creek (93N), and Upper Bull Run Creek (93O) subwatersheds. This protocol should be presented to the Level 1 team prior to next years mineral action operations.
 - vii. Conduct stream surveys using the above protocol in the referenced watersheds. These surveys shall be completed within three years. The results of the survey shall be reported to the Level 1 team on an annual basis prior to the onset of the following year's operations.
 - viii. The annual report will be submitted by January 31 each year to:
Branch Chief - Portland
NOAA Fisheries
Attn: 2000/01459
525 NE Oregon Street, Suite 500
Portland, OR 97232
 - c. NOTICE. If a dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to the NOAA Fisheries Law Enforcement Office, at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; phone: 360/418-4246. Care should be taken in handling sick

or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. Besides the care of sick or injured endangered and threatened species, or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence with the specimen is not unnecessarily disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state Activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating or offsetting the impact of the activity on

EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reason for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed action is detailed above in section 1.2 of the ESA portion of this Opinion. The action area includes the North Fork John Day River Sub-basin. This area has been designated as EFH for various life stages of chinook salmon.

3.5 Effects of Proposed Action

As described in detail in the ESA portion of this consultation, the proposed activities may result in adverse effects to a variety of habitat parameters.

3.6 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect the EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would

adversely affect EFH. In addition to conservation measures proposed for the project by the MNF, all of the Reasonable and Prudent Measures and the Terms and Conditions contained in section 2.4 of the ESA portion of this Opinion are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

The Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the MNF to provide a written response to NOAA Fisheries' EFH conservation recommendations within 30 days of its receipt of this letter. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. If the response is inconsistent with NOAA Fisheries' conservation recommendations, the reasons for not implementing the MNF shall explain its reasons for not following the recommendations.

3.9 Supplemental Consultation

The MNF must reinitiate EFH consultation with NOAA Fisheries if either the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BA and additional information requested by NOAA Fisheries and provided by the UNF.

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